

Claims:

1    1. A method to manage packet fragmentation for address translation, comprising:  
2       receiving a plurality of packet fragments for a packet having a first address;  
3       translating said first address into a second address without reassembling said  
4       packet fragments into said packet; and  
5       sending said packet fragments using said second address.

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1    2. The method of claim 1, wherein said translating comprises:  
2       identifying a packet fragment having a packet header, with said packet header  
3       having a packet identifier, translation information and a packet length;  
4       determining whether all packet fragments for said packet have been received;  
5       retrieving translation information from said packet header; and  
6       translating said first address into said second address using said translation  
7       information.

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1    3. The method of claim 2, wherein said translation information comprises a port  
2       number.

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1    4. The method of claim 2, wherein each packet fragment includes a packet fragment  
2       header having said packet identifier, a more bit and an offset value, and said determining  
3       comprises:

4           storing each packet fragment having said packet identifier and said more bit set to  
5        a predetermined value; and  
6           determining whether all packet fragments for said packet have been received  
7        using said offset values.

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1        5.      The method of claim 4, wherein each offset value represents a position for said  
2        packet fragment in said packet, and said determining whether all packet fragments for  
3        said packet have been received using said offset values comprises:  
4           collecting said offset values;  
5           retrieving said packet length; and  
6           determining whether all positions for said packet are filled by said collected offset  
7        values using said packet length.

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1        6.      The method of claim 2, wherein each packet fragment includes a packet fragment  
2        header having said packet identifier, a more bit and an offset value, and said determining  
3        comprises:  
4           storing each packet fragment having said packet identifier and said offset value is  
5        a value other than zero; and  
6           determining whether all packet fragments for said packet have been received  
7        using said offset values.

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1       7.     The method of claim 6, wherein each offset value represents a position for said  
2     packet fragment in said packet, and said determining whether all packet fragments for  
3     said packet have been received using said offset values comprises:

4              collecting said offset values;

5              retrieving said packet length; and

6              determining whether all positions are filled by said collected offset values using  
7     said packet length.

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1       8.     The method of claim 5, wherein each offset value represents a position in bytes  
2     divided by eight for said packet fragment in said packet.

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1       9.     The method of claim 7, wherein each offset value represents a position in bytes  
2     divided by eight for said packet fragment in said packet.

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1       10.    The method of claim 1, further comprising:

2              detecting an occurrence of a terminating condition prior to receiving all of said  
3     packet fragments for said packet; and

4              releasing said packet fragments in accordance with said detection.

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1       11.    A packet fragmentation manager to manage packet fragmentation for address  
2     translation, comprising:

3              a collection module for collecting and storing a plurality of packet fragments for a  
4     packet having a first address;

5           a verification module for verifying all packet fragments for said packet have been  
6    received; and

7           a translation module for retrieving translation information from one of said packet  
8    fragments and translating said first address into a second address using said translation  
9    information.

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1    12.   The packet fragmentation manager of claim 11, further comprising a  
2    communication module for sending said packet fragments to said second address.

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1    13.   A system to manage packet fragmentation for an address translation device,  
2    comprising:

3           a source node to send packet fragments for a packet having a first address; and  
4           an intermediate node to receive said packet fragments and translate said first  
5    address to a second address without reassembling said packet fragments into said packet.

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1    14.   The system of claim 13, further comprising a destination node having said second  
2    address to receive said packet fragments and reassemble said packet fragments into said  
3    packet.

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1    15.   A system to manage packet fragmentation for an address translation device,  
2    comprising:  
3           a computer platform adapted to manage packet fragmentation;

4           said platform being further adapted to receive a plurality of packet fragments for a  
5        packet having a first address, translate the first address into a second address without  
6        reassembling said packet fragments into said packet, and send said packet fragments  
7        using said second address.

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1       16.     The system of claim 15, wherein said platform is further adapted to perform said  
2        translation by identifying a packet fragment having a packet header, with said packet  
3        header having a packet identifier, translation information and a packet length,  
4        determining whether all packet fragments for said packet have been received, retrieving  
5        translation information from said packet header, and translating said first address into  
6        said second address using said translation information.

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1       17.     The system of claim 15, wherein said platform is further adapted to use offset  
2        values from each packet fragment to determine whether all packet fragments for said  
3        packet have been received by collecting said offset values, retrieving a packet length for  
4        said packet, and determining whether all positions for said packet are filled by said  
5        collected offset values using said packet length.

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1       18.     An article comprising:  
2            a storage medium;  
3            said storage medium including stored instructions that, when executed by a  
4        processor, result in receiving a plurality of packet fragments for a packet having a first  
5        address, translating said first address into a second address without reassembling said

6     packet fragments into said packet, and sending said packet fragments using said second  
7     address.

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1     19.    The article of claim 18, wherein the stored instructions, when executed by a  
2     processor, further result in said translating by identifying a packet fragment having a  
3     packet header, with said packet header having a packet identifier, translation information  
4     and a packet length, determining whether all packet fragments for said packet have been  
5     received, retrieving translation information from said packet header, and translating said  
6     first address into said second address using said translation information.

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1     20.    The article of claim 19, wherein the stored instructions, when executed by a  
2     processor, further result in using offset values from each packet fragment to determine  
3     whether all packet fragments for said packet have been received by collecting said offset  
4     values, retrieving a packet length for said packet, and determining whether all positions  
5     for said packet are filled by said collected offset values using said packet length.

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1     21.    The article of claim 18, wherein the stored instructions, when executed by a  
2     processor, further result in detecting an occurrence of a terminating condition prior to  
3     receiving all of said packet fragments for said packet, and releasing said packet fragments  
4     in accordance with said detection.

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